

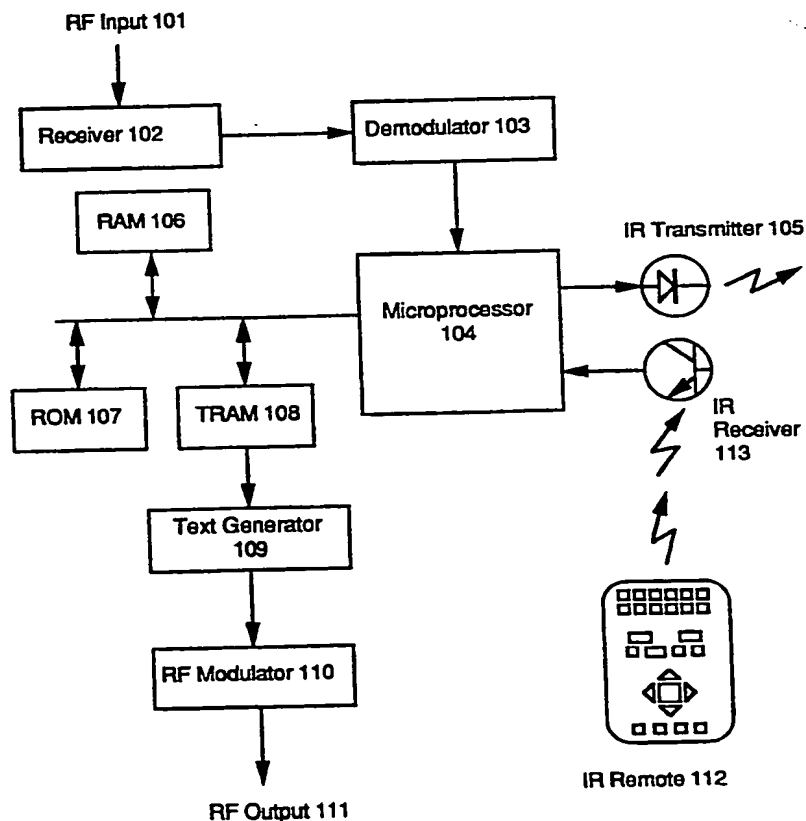


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<b>(21) International Application Number:</b> PCT/AU90/00226 <b>(22) International Filing Date:</b> 30 May 1990 (30.05.90)  <b>(30) Priority data:</b> PJ 4500                      1 June 1989 (01.06.89)                      AU  <b>(71) Applicant (for all designated States except US):</b> RIGHT HEMISPHERE PTY. LTD. [AU/AU]; 28 Adeline Street, Faulconbridge, NSW 2776 (AU).  <b>(72) Inventor; and</b> <b>(75) Inventor/Applicant (for US only) :</b> VOGEL, Peter, Samuel [AU/AU]; 28 Adeline Street, Faulconbridge, NSW 2776 (AU).		<b>(81) Designated States:</b> AT (European patent), AU, BE (Euro- pean patent), CH (European patent), DE (European pa- tent)*, DK (European patent), ES (European patent), FR (European patent), GB (European patent), IT (Euro- pean patent), JP, LU (European patent), NL (European patent), SE (European patent), US.  <b>Published</b> <i>With international search report.</i>

**(54) Title:** TELEVISION PROGRAM SELECTION**(57) Abstract**

A signal representative of a television program guide and a signal indicating which program is currently being received are received at the point of reception of a television program signal. The program guide signal is used to cause a program guide to be displayed on a television screen. A viewer selects one or more programs to be recorded or viewed from the displayed guide. While the received program indicating signal indicates that the program currently being received is one of the selected programs, recording or viewing of the program is enabled. A further extension of the invention causes the name of a television program to be recorded on a video recording along with the program so that on replay the recording can readily be identified.



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## TELEVISION PROGRAM SELECTION

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## TECHNICAL FIELD

The present invention relates to means for and methods of controlling video appliances, such as video cassette recorders or television receivers, so that selected television programs are viewed or recorded.

## BACKGROUND ART

With the increasing use of video cassette recorders (VCRs) in the home, VCRs are being increasingly used for recording broadcast programs for later replay and viewing. Many VCRs are equipped with timing means for starting and stopping recording of programs at times selected by the user. To take advantage of this ability, the user must consult a television schedule, select the programs to be recorded, and enter into the VCR's memory the start time and end time or duration of the selected programs, and channel to be recorded. In some cases this process can be complicated and error-prone. There is a great need for convenient ways of selecting programs to be recorded.

In an attempt to address this problem, some manufacturers have equipped VCRs with bar-code reading wands. Users can pass the wand over a bar-code printed on the television schedule which identifies the channel and time of the selected program. This information is used to set the timing means of the VCR. Another variation on this concept involves use of a sheet of times, dates and channels bearing the associated bar codes. In this case, the user must scan the appropriate bar code on this sheet for time, date and channel corresponding to programs selected for recording.

While these prior-art schemes have somewhat alleviated the difficulties, programming VCRs for recording is still error prone and inconvenient. Attempts have been made to provide improved programming by providing a device which accepts a machine-readable version of the television schedule via the medium of

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magnetic card, tape or similar means, the user being then offered a display of available programs from which to select. Although this arrangement does represent an improvement over prior schemes, it suffers the disadvantage that the user must obtain the medium on which the schedule is distributed, which may be inconvenient. The media cost and cost of the reading device is also considerable. Another shortcoming of prior-art schemes is that they rely on time-of-day information for starting and stopping recording, with the result that unwanted material can be recorded, or part of the wanted program missed, in cases where actual broadcast times differ from scheduled times. It is also not possible using such schemes to control recording with great precision, with the result that selective recording, as required for example for eliminating advertisements from recordings, is not possible.

#### DISCLOSURE OF INVENTION

The present invention is directed towards providing new and useful alternatives to known arrangements for controlling video appliances so that selected programs can be viewed or recorded. As well as making selection simple, fast and accurate, the present invention offers a number of other benefits not hitherto obtainable.

According to the present invention there is provided a method of selecting television programs to be recorded including the steps of receiving a first signal conveying data representative of a television programming schedule, decoding said received signals, displaying the resulting decoded schedule information, selecting one or more of programs displayed in said schedule as programs to be recorded, receiving a second signal identifying for each television channel the program being currently broadcast, decoding said second signal, and controlling recording of the selected programs according to the selection from the schedule and the content of said decoded second signal.

According to another aspect of the present invention there is provided a method of selecting television programs to be viewed including the steps of receiving a first signal conveying data representative of a television programming schedule, decoding said received signals, displaying the resulting decoded schedule

information, identifying a number of programs displayed in said schedule as programs to be recorded, receiving a second signal identifying for each television channel the program being currently broadcast, decoding said second signal, and enabling viewing of the selected programs according to the programs selected from the schedule as those to be viewed and the content of said decoded second signal.

According to another useful extension of this inventive concept, there is provided a television program recording identifying method comprising the steps of receiving a first signal representative of the name of a television program being broadcast, receiving a second signal being a television broadcast, and recording said first signal while simultaneously recording said second signal.

In another aspect, the invention consists in a television program recording selector including a receiver adapted to receive a first signal conveying data representative of a television programming schedule, means to decode said received signals, means for displaying the resulting decoded schedule information, means for selecting a number of programs displayed in said schedule as programs to be recorded, means for receiving a second signal identifying for each television channel the program being currently broadcast, means for decoding said second signal, and means for controlling recording of the selected programs according to the programs identified as those to be recorded and the content of said decoded second signal.

In another aspect, the invention consists in a television program viewing selector including a receiver adapted to receive a first signal conveying data representative of a television programming schedule, means to decode said received signal, means for displaying the resulting decoded schedule information, means for selecting a number of programs displayed in said schedule as programs to be viewed, means for receiving a second signal identifying for each television channel the program being currently broadcast, means for decoding said second signal, and means for controlling viewing of the identified programs according to the programs selected as those to be viewed and the content of said decoded second signal.

According to another useful extension of this inventive concept, there is provided a television program recorder comprising means

for receiving an identifying signal representative of the name of a television program being broadcast, recording means adapted to record said signal while simultaneously recording the television program being broadcast, replay means for simultaneously  
5   replaying said identifying signal and said program, and means for displaying said identifying signal in the form of text.

### BRIEF DESCRIPTION OF THE DRAWINGS

10       A particular embodiment of the invention will now be described with reference to the drawings in which:-

Fig. 1 is a block diagram of a television program selector according to the invention;

Fig. 2 shows the control panel of this embodiment

15       Fig. 3 shows an example of the schedule menu display of this embodiment; and

Fig. 4 shows an example of the status menu display of this embodiment

### 20       MODE FOR CARRYING OUT THE INVENTION

As seen in Fig. 1, an embodiment of the invention is provided for use in conjunction with video cassette recorders (VCRs). This embodiment takes the form of a device which communicates with  
25   the VCR via an infra-red (IR) control signal, this signal being similar to the control signal used by the hand-held remote control of conventional VCRs. This embodiment of the invention is in turn controlled by a hand-held remote control. Using this control means, the invention allows the user to control the usual functions of a VCR,  
30   such as recording or playing a tape, as well as the novel functions provided by this invention. This arrangement is particularly beneficial as it can be used with a wide range of VCRs without modification of the VCR. Referring to Fig. 1, RF input 101 is derived from the television antenna being used to receive off-air programs  
35   or a separate antenna, and comprises a signal modulated with data relating to the television schedule and the programs currently being broadcast. This signal is received by receiver 102, and fed to

demodulator 103 which provides as an output digital data which is fed to an input of microprocessor 104.

Microprocessor 104 executes program instructions stored in read-only-memory ROM 107, and is responsible for all control and user-interface functions of this embodiment of the invention.  
5 Received data comprises two main types: periodic data and real-time data. Periodic data comprises the television schedule for the current day and future days, including the name of each program, its scheduled start time, the channel on which it is to be broadcast,  
10 and a classification (such as whether or not it is suitable for viewing by children). The periodic data is transmitted from a remote source, such as the television broadcast station or a separate transmitting station, at infrequent intervals, say once every hour. Real-time data comprises information which identifies which program is currently  
15 being broadcast on each channel, including the program classification. This data is transmitted from the remote source as soon as possible after a change of program on any channel, and is then repeated occasionally, say every 10 seconds, until another change of program occurs.

20 On receipt of program schedule data, microprocessor 104 stores the data in random access memory RAM 106.

On receipt of a command from the user requesting information, such as the program schedule, microprocessor 104 retrieves the relevant data from RAM 106, formats it for display and stores it in  
25 text random access memory TRAM 108.

Text generator 109 accesses the data stored in TRAM 108 and generates a video raster signal which when conveyed to a television receiver via RF modulator 110 and RF output 111 causes the text to be displayed on the television receiver screen.

30 IR receiver 113 receives infra-red control signals from IR remote 112, which for convenience is a hand-held control device. IR remote 112 includes a switch array which provides means for users to issue instructions to microprocessor 104, and in this embodiment is constructed as shown in Fig.2, so as to offer most  
35 conveniently the functions described below.

IR transmitter 105 is an infra-red emitting diode which is used to control a VCR, via the infra-red remote control channel commonly used with VCRs. IR transmitter 105 is pulsed under control of

microprocessor 104 to generate control data which controls the operation of the VCR, for example, by issuing a PAUSE command or a RECORD command.

Referring now to Fig. 2, the layout of switches of the user control keyboard can be seen. Twelve switches labelled "CHANNEL" are used to select one of 12 channels to be viewed. The switches "Rew", "FF", "Rec", "Play", "Pause" and "Stop" control the rewind, fast forward, record, play, pause and stop functions of the VCR in the usual manner. The switch "sel" is used to select a menu option. The four triangular switches surrounding the "sel" switch cause movement of the cursor on a menu display in one of the four directions indicated. The switches "C", "P", "S" and "?" are used to initiate the classification, program, status and QUERY functions respectively. The operation of these four functions will now be described.

**CLASSIFICATION.** Pressing this button causes a display such as that shown in Fig. 4 to appear on the television screen. This display is known as the STATUS menu. The CLASSIFICATION function relates to the text in the left-hand column of the display, headed "ENABLE". The letters shown in the column under ENABLE represent the following classifications:

C	Suitable for children
G	General viewing
A	Adult
R	Restricted
AD	Advertisement or other non-program material

The boxes adjacent to each classification letter indicate whether each classification is enabled, a check mark indicating enabled, and a cross indicating prohibited. If a program of a classification which is prohibited is received, the invention causes the video recorder to pause, preventing recording. If desired, viewing of programs bearing prohibited classification can also be inhibited by the invention causing the channel selector of the receiver or VCR to select the output of the invention, rather than the channel of the program. It is also possible to provide an alarm function to alert viewers that a particular program is about to start. For example, the



invention can be used to turn on the television receiver when a preselected broadcast starts, and to sound an alarm five minutes beforehand. To enable or prohibit a particular classification, the user pushes the C button, which causes the STATUS display to  
5 appear with the cursor positioned on one of the indicator boxes. The desired classification is then selected by moving the cursor up or down using the up or down pointing triangular keys. The enable status of the cursored classification can be changed by pressing the "sel" button.

10 Another box in the ENABLE column labelled "LOCK" enables a security function which prevents changing the status of classifications unless a personal identity number, known only to authorised persons, is entered first.

PROGRAM. Pressing this button causes a display such as that of  
15 Fig. 3 to be displayed. This display is known as the PROGRAM menu, and shows a list of scheduled programs for each available channel. Channel indicator box 301 shows the date and channel to which each column of schedule information relates. Each entry in the schedule shows the scheduled time of broadcast, title and censorship  
20 classification. A cursor is used to highlight one schedule item at a time. The cursor can be moved up, down, right or left using the triangular switches. By way of example, in Fig. 3 item 302 is shown as cursored. A program can be selected for recording by pressing the "sel" switch when the desired item is cursored. An asterisk is  
25 displayed next to each item selected for recording, as shown in the example of item 303 in Fig. 3. As it will generally not be possible to fit all the schedule information on the display, this embodiment of the invention is arranged so that the program menu scrolls in both axes. This scrolling occurs if the cursor movement switches are  
30 pressed and the cursor is at the limit of movement in the corresponding direction. As seen in Fig. 3, arrows appear on the display indicating that further information can be accessed by scrolling the display further in the direction of the arrow.

STATUS. Pressing this button causes the status menu to be  
35 shown. The column of this display under the heading "CURRENT" shows details of the program currently being broadcast on the channel selected for viewing. The information displayed includes the scheduled time of broadcast, date, channel, title and

classification. The status menu also shows a list of programs selected for recording. The downward-pointing arrow below the list shown in the example of Fig. 4 indicates that there are more items selected for recording, and these can be accessed by scrolling the display using the downward-pointing cursor control switch.

5        **QUERY.** If this switch is pressed while a menu is being displayed, details of the currently censored broadcast are displayed. For example, if a movie is censored and the "?" switch is pressed, a description of the movie is displayed, the text of this description  
10        having been previously conveyed from the remote transmitter as part of the schedule information. If the "?" switch is pressed when no menu is being displayed, details of the program currently being received are displayed.

As well as responding as described above to commands requiring text display as described above, the microprocessor  
15        performs a number of other major functions.

These functions are now described with reference to Fig. 1.

20        **VCR CONTROL.** Certain commands received by IR receiver 113, in particular those which effect the usual VCR functions such as play, stop, channel change, are passed on to the VCR being controlled. Because control codes used by different models of VCRs are not standardised, the command code required by the VCR will in general not be the same as that generated by the corresponding button of IR remote 112. To permit use of the invention with a wide range of  
25        VCRs, data representing the control codes required by the particular VCR in use is stored within the ROM or RAM of the invention, so that when a VCR control command is to be issued, the corresponding code can be looked up and transmitted. Microprocessor 104 maintains a  
30        VCR status table in RAM 106, which stores data such as television channel currently being received and VCR transport status such as stopped, recording or spooling. This status table is updated each time a VCR control command is issued.

35        **SCHEDULE UPDATE.** Data conveying schedule information is periodically received by receiver 102. This information is stored in RAM 106. When the available memory is full, the oldest schedule information is discarded.

**CURRENT PROGRAM IDENTIFICATION.** Whenever a change of program occurs on one of the available television channels, an

identifying signal is received by receiver 102. This signal includes data identifying the channel concerned, the classification of the program, the name of the program, and such other identifying information as may be desired. When an identifying signal is  
5 recognised by microprocessor 104, it takes different action depending on the current status of the VCR (ascertained by reference to the status table in memory) and the instructions previously issued by the user. The VCR status must be taken into account because different commands must be generated depending  
10 on what the VCR is doing at that moment. For example, if advertisements have been prohibited (using the status display) and the received identifying signal indicates commencement of an advertisement, the microprocessor must ascertain whether the channel indicated by the identifying signal is the channel currently  
15 selected by the VCR's tuner. Because any channel change commands previously issued to the VCR by the user have been forwarded to the VCR by the invention, the identity of the currently-selected channel is always available to the microprocessor. In this example, if the VCR is tuned to the channel on which a prohibited  
20 advertisement is in progress, further reference is made to the status table to ascertain whether the VCR is recording. If it is, a suitable "pause" command is issued. When an identifying signal indicates that the program being recorded has resumed, the status is again checked before issuing a "resume recording" command, in case the  
25 user has issued a command which has changed the status of the VCR in the meantime. Another example of action taken on receipt of a current program identification signal is comparison to a list of programs selected from the program guide display for recording. If the current program is identified as one selected for recording, the  
30 VCR status is read and, depending on the current status, the commands required to start recording are issued. For example, if the VCR is currently tuned to a different channel, "channel up" or "channel down" commands are issued as required to select the channel to be recorded. Other commands, such as "power on" may  
35 also be issued if required before the "record" command is issued.

The functions of this embodiment of the invention are implemented by suitable software stored in ROM 107 and executed by microprocessor 104. The program required to achieve this can

be effectively realised in many different ways well known to those skilled in the art.

The foregoing describes only one embodiment of the present invention, and changes, obvious to those skilled in the art, can be  
5 made without departing from the scope of the invention.

For example, whereas the exemplary embodiment described above takes the form of apparatus separate from the video recording or viewing apparatus, the invention can also be practised by including suitable means within a video recorder, television  
10 receiver or other appliance. In such a case, control of the receiving or recording appliance can be effected by suitable connection to the control means of the appliance, rather than the infra-red control path used by the embodiment above.

It will also be understood that the functions offered to the user  
15 according to the embodiment described above are given by way of example only, and other functions can be provided without departing from the scope of the invention. For example, whereas the embodiment described causes recording or viewing of the classifications not enabled to be inhibited, it is envisaged that other  
20 options can be provided. For example, the user can instruct that advertisements be muted, in which case the invention is arranged so that on receipt of data indicating that an advertisement is being received on the channel being viewed, a command is issued to the television receiver to cause muting of the sound signal, the sound  
25 being re-enabled on resumption of program.

It is also envisaged that the user controls of the invention can be incorporated with control of other appliances, for example, by incorporating the function switches of the invention into an infra-red remote control handpiece of another appliance, such as a VCR or  
30 television receiver.

According to a further extension of the invention, program identification data within the invention can be used to label tape recordings, using the identifying data received by the data receiver of the invention to provide the labelling information. For example,  
35 the invention can be arranged to place a suitable code in the vertical interval of the video recording so that the name of a program is recorded as the program is recorded. This extension permits programs recorded on a tape to be identified by name on replay, as

well as facilitating automatic location of a program by name. For convenience the invention can be further adapted to cause the name of a program to be printed legibly, for example on the casing of the video cassette on which the corresponding program is recorded.

- 5 This can be achieved in practise using a thermal or impact or other printing means controlled by the microprocessor or other controller of the invention, program identifying data received by the invention being caused to be printed as alpha-numeric characters on the outside of the video cassette, or onto another medium such as an  
10 adhesive label which can be subsequently affixed to the enclosure of the recording or into a catalogue or elsewhere.

- Whereas in the exemplary embodiment recording of selected programs is initiated and terminated according to correspondence between the name of a selected program and the name of the  
15 currently-broadcast program being received, it is also possible to control recording according to the scheduled time of broadcast.

- It will also be understood by those skilled in the art that the display functions and other details of the invention described in relation to the embodiment above are given by way of example  
20 only, and that changes to the features offered and particularly to the means of interaction with the user can be made without departing from the scope and spirit of the invention. For example, whereas the television display is used to display information for user inspection and switches are used for user control, the invention can  
25 be practised using any other suitable display means and control means, such as a liquid crystal display or touch-activated screen. The screen formats shown in the drawings herein are given by way of example only and should also not be construed as limiting the scope of the invention. Furthermore, whereas the exemplary  
30 embodiment provides a video-modulated RF output which is selected for viewing of menus, it is possible to arrange the invention so that the requested information is overlaid on the picture of the program being viewed.

- It is also envisaged that the method of transmission of data to  
35 the invention from a remote station need not be by means of a radio transmission as used in the exemplary embodiment above. For example, the data could be conveyed to the invention by means of a signal embedded in the television broadcast, such as a special-

purpose subcarrier or vertical-interval signal, or by cable or fibre-optic connection, or by data transmitted by optical signalling via a designated area of a television picture, or by telephone line, or by any other data transmission means. It is also possible to transmit  
5 the non-realtime data by means of portable recording medium such as floppy disk or optically marked card.

It is envisaged that the data used by the invention can originate from any source without departing from the scope of the invention. For example, the data can originate from a central station where a  
10 person monitors all television channels and transmits identifying information to the invention by activating appropriate switches controlling a suitably-equipped transmitter. Alternatively, program information can be automatically generated using a data-base in which detailed programming data is stored in advance.

15

#### INDUSTRIAL APPLICABILITY

The invention provides improved means for controlling the operation of video recording equipment and television receivers. In  
20 one application the invention can be used to select which of a number of available broadcast television programs will be recorded by a domestic video cassette recorder.

## CLAIMS

- 5 1. A method of controlling a video appliance comprising the steps of:  
receiving a first signal representative of a television program schedule;  
receiving a second signal indicating which television program is currently being received;  
10 converting said first signal into a display of text representative of a television program schedule;  
selecting a subset of items of said displayed text;  
causing said selected subset of displayed text to be marked on said display;  
15 and, if said second signal indicates that a television program currently being received corresponds to one of said selected items;  
causing a video apparatus to be activated.
- 20 2. A method of controlling a video appliance according to claim 1 wherein said first signal and said second signal are transmitted as part of a broadcast television signal.
- 25 3. A method of controlling a video appliance according to claim 1 wherein said first signal and said second signal are transmitted as a data signal independent of a broadcast television signal.
- 30 4. A method of controlling a video appliance according to claim 2 comprising the further steps of:  
receiving a classification signal indicating the class of program being received;  
selecting a set of classifications which are to be prohibited;  
comparing said classification signal to said set of prohibited  
35 classifications, and, if said classification signal indicates that a received program is a member of the set of prohibited classifications;

causing a video appliance to be temporarily deactivated until said classification signal indicates that a received program is no longer a member of the set of prohibited classifications.

5

5. A method of controlling a video appliance according to claim 3 comprising the further steps of:  
receiving a classification signal indicating the class of program being received;

10

selecting a set of classifications which are to be prohibited;  
comparing said classification signal to said set of prohibited classifications, and, if said classification signal indicates that a received program is a member of the set of prohibited classifications;

15

causing a video appliance to be temporarily deactivated until said classification signal indicates that a received program is no longer a member of the set of prohibited classifications.

20

6. A method of controlling a video appliance according to claim 2 comprising the further step of:  
deriving, from said second signal, visible text descriptive of the television program currently being replayed.

25

7. A method of controlling a video appliance according to claim 3 comprising the further step of:  
deriving, from said second signal, visible text descriptive of the television program currently being replayed.

30

8. A method of controlling a video appliance according to claim 2 comprising the further steps of:  
combining said second signal with a television program signal;  
recording said combined signal on a video recording medium;  
replaying said recorded signal;  
separating said second signal from said television program signal; and  
deriving, from said second signal, visible text descriptive of the television program currently being replayed.

35



9. A method of controlling a video appliance according to claim 3 comprising the further steps of:  
combining said second signal with a television program signal;  
5 recording said combined signal on a video recording medium;  
replaying said recorded signal;  
separating said second signal from said television program  
signal; and  
10 deriving, from said second signal, visible text descriptive of  
the television program currently being replayed.
10. A method of controlling a video appliance according to claims 1-9 wherein said video appliance is a video recorder.
- 15 11. A method of controlling a video appliance according to claims 1-9 wherein said video appliance is a television receiver.
12. A video appliance controller comprising:  
means for receiving a first signal representative of a  
20 television program schedule;  
means for receiving a second signal indicating which  
television program is currently being received;  
means for converting said first signal into a display of text  
representative of a television program schedule;  
25 means for selecting a subset of items of said displayed text;  
means for causing said selected subset of displayed text to be  
marked on said display; and,  
means for causing a video apparatus to be activated if said  
30 second signal indicates that a television program currently  
being received corresponds to one of said selected items.
13. A video appliance controller according to claim 12 wherein  
said first signal and said second signal are transmitted as part  
of a broadcast television signal.
- 35 14. A video appliance controller according to claim 12 wherein  
said first signal and said second signal are transmitted as a  
data signal independent of a broadcast television signal.

15. A video appliance controller according to claim 13 and further comprising:  
means for receiving a classification signal indicating the class  
5 of program being received;  
means for selecting a set of classifications which are to be prohibited;  
means for comparing said classification signal to said set of prohibited classifications, and, if said classification signal  
10 indicates that a received program is a member of the set of prohibited classifications;  
causing a video appliance to be temporarily deactivated until said classification signal indicates that a received program is no longer a member of the set of prohibited  
15 classifications.
16. A video appliance controller according to claim 14 and further comprising:  
means for receiving a classification signal indicating the class  
20 of program being received;  
means for selecting a set of classifications which are to be prohibited;  
means for comparing said classification signal to said set of prohibited classifications, and, if said classification signal  
25 indicates that a received program is a member of the set of prohibited classifications;  
causing a video appliance to be temporarily deactivated until said classification signal indicates that a received program is no longer a member of the set of prohibited  
30 classifications.
17. A video appliance controller according to claim 13 and further comprising:  
means for deriving, from said second signal, visible text  
35 descriptive of the television program currently being replayed.

18. A video appliance controller according to claim 14 and further comprising:  
means for deriving, from said second signal, visible text descriptive of the television program currently being  
5 replayed.
19. A video recorder including a video appliance controller according to claims 12-18.
- 10 20. A television receiver including a video appliance controller according to claims 12-18.
21. A video recorder comprising an appliance controller according to claim 13 and further comprising:  
15 means for combining said second signal with a television program signal;  
means for recording said combined signal on a video recording medium;  
means for replaying said recorded signal;  
20 means for separating said second signal from said television program signal; and  
means for deriving, from said second signal, visible text descriptive of the television program currently being  
replayed.  
25
22. A video recorder comprising an appliance controller according to claim 14 and further comprising:  
means for combining said second signal with a television program signal;  
30 means for recording said combined signal on a video recording medium;  
means for replaying said recorded signal;  
means for separating said second signal from said television program signal; and  
35 means for deriving, from said second signal, visible text descriptive of the television program currently being  
replayed.

23. A video appliance controller according to claims 15 or 16 wherein said video appliance is controlled by means of infra-red control signals and further comprising:  
a transmitter adapted to transmit infra-red signals to said  
5 video appliance;  
a receiver adapted to receive infra-red signals from hand-held remote control means;  
means for recognising those infra-red signals received by said  
infra-red receiver which correspond to appliance control  
10 commands;  
memory means for forming a table of data representative of the most recent appliance control commands received;  
and  
means for causing said appliance control commands to be  
15 transmitted to said video appliance.
24. A video appliance controller according to claims 15 or 16 wherein said video appliance is controlled by means of infra-red control signals and further comprising:  
20 a transmitter adapted to transmit infra-red signals to said video appliance;  
a receiver adapted to receive infra-red signals from hand-held remote control means;  
means for recognising infra-red signals received by said  
25 infra-red receiver corresponding to appliance control commands;  
memory means for forming a table of data representative of the most recent appliance control commands received;  
means for causing said appliance control commands to be  
30 transmitted to said video appliance;  
means for receiving a classification signal indicating a class of program being received and a signal indicating a corresponding channel;  
means for selecting a set of classifications which are to be  
35 prohibited; and  
means for:  
comparing said stored channel data with said  
corresponding channel data, and if the result is equality,

comparing said classification signal to said set of prohibited classifications, and, if said classification signal indicates that a received program is a member of the set of prohibited classifications;

5

causing a video appliance to be temporarily deactivated until said classification signal indicates that a received program is no longer a member of the set of prohibited classifications.

10

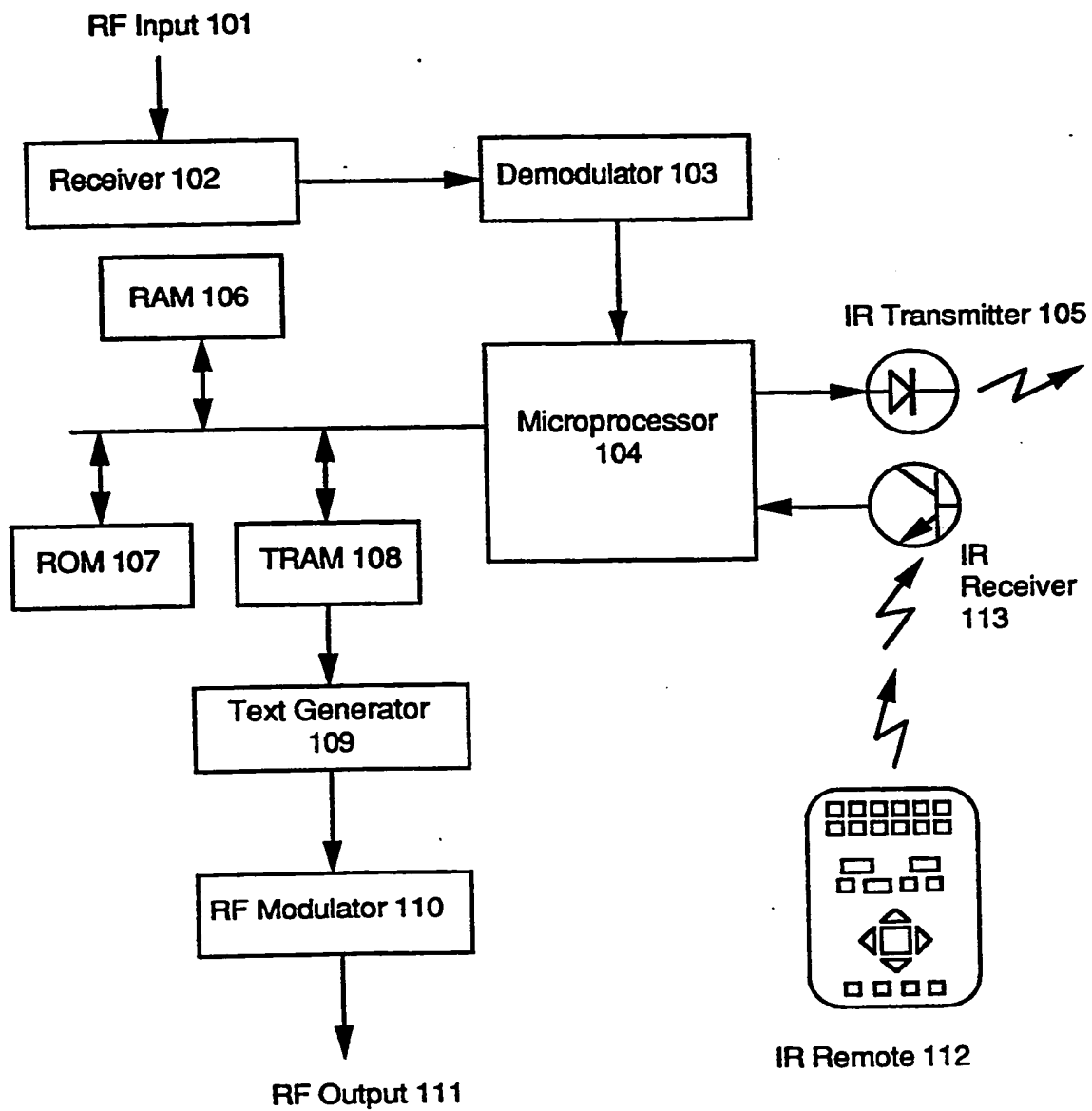


Fig. 1

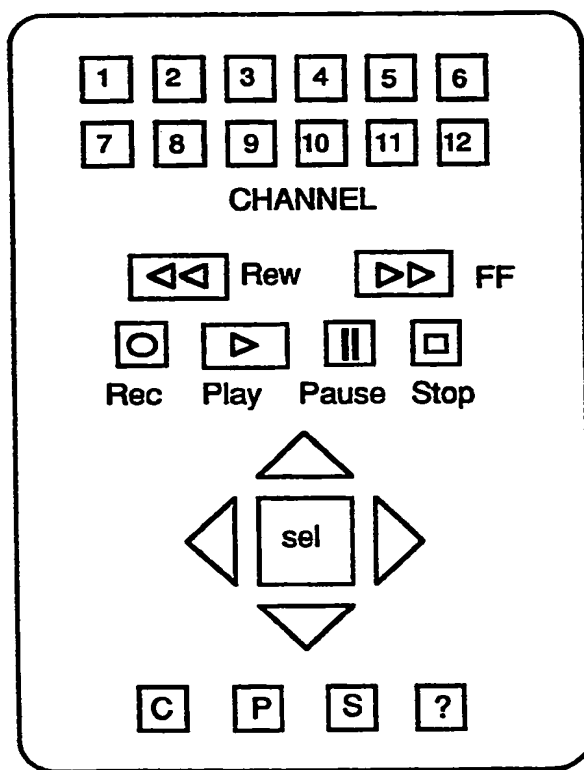


Fig 2

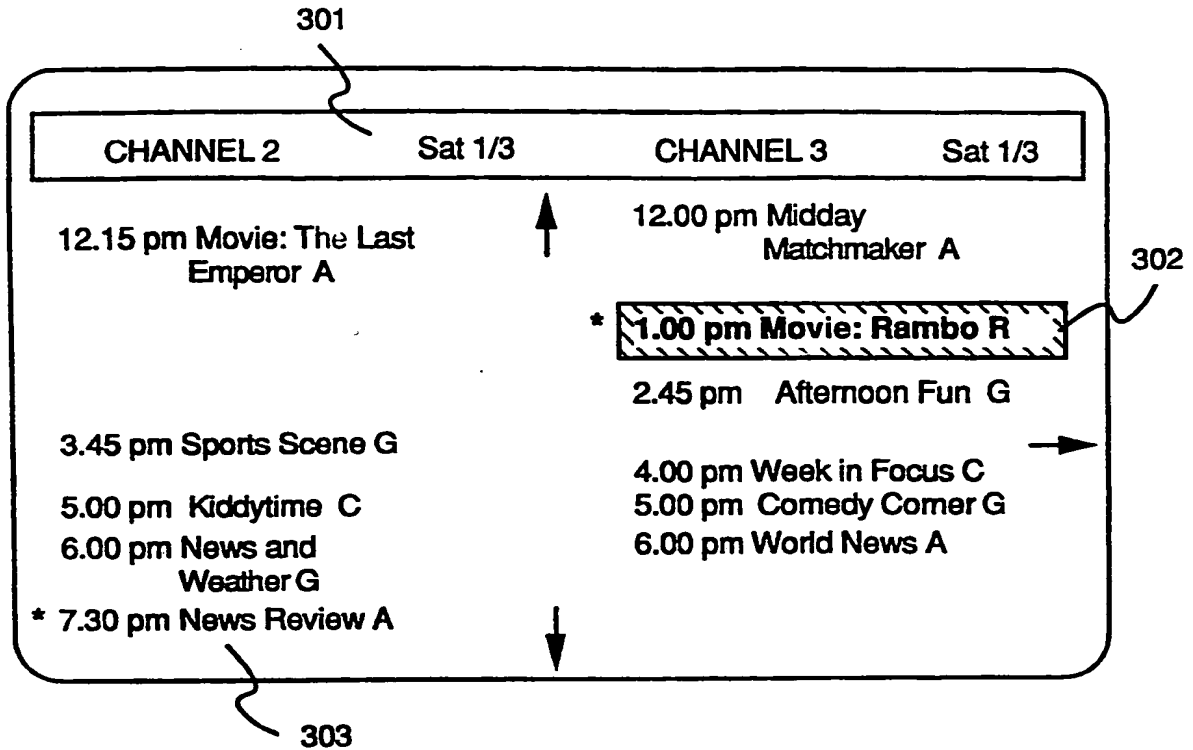


Fig 3

STATUS		Sat 1/3
ENABLE	CURRENT	RECORD
<input checked="" type="checkbox"/> C	10.00 am Sat 1/3 Ch 4 Let's Speak Greek G	
<input checked="" type="checkbox"/> G		1.00 pm Sat 1/3 Ch3 Movie: Rambo R
<input checked="" type="checkbox"/> A		
<input checked="" type="checkbox"/> R		7.30 pm Sat 1/3 Ch2 News Review A
<input checked="" type="checkbox"/> AD		
<input checked="" type="checkbox"/> LOCK		7.30 pm Sun 2/3 Ch5 ↓

Fig 4



## INTERNATIONAL SEARCH REPORT

International Application No. PCT/AU 90/00226

## I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all) 6

According to International Patent Classification (IPC) or to both National Classification and IPC

Int. Cl.<sup>5</sup> H04N 7/173; G11B 27/02, 27/10, 27/36

## II. FIELDS SEARCHED

Minimum Documentation Searched 7

Classification System | Classification Symbols

IPC | H04N 7/16, 7/173; G11B 27/02, 27/10, 27/36

Documentation Searched other than Minimum Documentation  
to the extent that such Documents are Included in the Fields Searched 8

AU: IPC as above; Australian Classification 05.42

## III. DOCUMENTS CONSIDERED TO BE RELEVANT 9

Category*	Citation of Document, <sup>11</sup> with indication <sup>12</sup> where appropriate, of the relevant passages	Relevant to Claim No 13
X,P	WO,A, 90/00847 (INSIGHT TELECAST INC) 25 January 1990 (25.01.90) See pages 3-18, Figures 1, 2	1, 2, 10-13, 19, 20
Y	WO,A, 88/04507 (BRITISH BROADCASTING CORPORATION) 16 June 1988 (16.06.88) See pages 1-10, Figures 1-3	1, 2, 10-13, 19, 20
Y	AU,A, 76254/87 (SANYO ELECTRIC CO, LTD) 4 February 1988 (04.02.88) See pages 6-9, Figures 1-3	1, 2, 10-13, 19, 20
Y	US,A, 4305101 (YARBOUGH et al) 8 December 1981 (08.12.81) See column 1 line 41 to column 5 line 10, Figures 1, 2, 5	1, 2, 4, 6, 8, 10-13, 15, 17, 19-21, 24
Y	US,A, 4390901 (KEISER) 28 June 1983 (28.06.83) See column 3 line 13 to column 5 line 5, Figures 1, 2	1, 2, 10-13, 19, 20
Y	US,A, 4605964 (CHARD) 12 August 1986 (12.08.86) See column 5 line 46 to column 7 line 65, Figure 3	1, 2, 4, 10-13, 15, 19, 20, 24
Y	US,A, 4635121 (HOFFMAN et al) 6 January 1987 (06.01.87) See column 2 lines 24-48, Figure 1	1, 12, 23

(continued...)

- \* Special categories of cited documents: 10 "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "G" document member of the same patent family

## IV. CERTIFICATION

Date of the Actual Completion of the  
International Search  
23 August 1990 (23.08.90)Date of Mailing of this International  
Search Report

29 August 1990

International Searching Authority

Signature of Authorized Officer

Australian Patent Office

R TOLHURST

## FURTHER INFORMATION CONTINUED FROM THE SECOND SHEET

Y	US,A, 4787063 (MUGUET) 22 November 1988 (22.11.88) See column 2 line 56 to column 3 line 31, column 8 line 66 to column 9 line 4, column 11 lines 45-65, Figures 1-4	1-3, 6, 7, 10-14, 17, 18, 23
Y,P	US,A, 4864429 (EIGELDINGER et al) 5 September 1989 (05.09.89) See column 1 line 44 to column 2 line 51, Figure 1	1, 2, 10-13, 19, 20

V. ☐ OBSERVATIONS WHERE CERTAIN CLAIMS WERE FOUND UNSEARCHABLE 1

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claim numbers .... because they relate to subject matter not required to be searched by this Authority, namely:
  
2. ☐ Claim numbers .... because they relate to parts of the international application that do comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
  
3. ☐ Claim numbers .... because they are dependent claims and are not drafted in accordance with the second and third sentences of PCT Rule 6.4 (a):

VI. ☐ OBSERVATIONS WHERE UNITY OF INVENTION IS LACKING 2

This International Searching Authority found multiple inventions in this international application as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims of the international application.
2. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims of the international application for which fees were paid, specifically claims:
  
3. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claim numbers:
  
4. ☐ As all searchable claims could be searched without effort justifying an additional fee, the International Searching Authority did not invite payment of any additional fee.

## Remark on Protest

- ☐ The additional search fees were accompanied by applicant's protest.  
☐ No protest accompanied the payment of additional search fees.

ANNEX TO THE INTERNATIONAL SEARCH REPORT ON  
INTERNATIONAL APPLICATION NO. PCT/AU 90/00226

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report		Patent Family Members			
WO 90/00847		AU 40420/89			
WO 88/04507		EP 296190	GB 2200519	JP 1502153	
AU 76254/87 AU 594179		EP 255107	JP 63050277	US 4879611	
US 4305101		CA 1159551 GB 2046967	DE 3014309 JP 55141876	FR 2454736	
US 4390901		DE 2950432			
US 4605964		AU 11045/83 WO 8302208	EP 96705	JP 58502179	
US 4635121		AT 26028 EP 112589	AU 21629/83 JP 59108433	DE 3370383	
US 4787063		EP 179001	FR 2572235	FR 2579397	
US 4864429		AU 62876/86 DK 1768/87 HU 46173 WO 8701001	DD 248915 EP 270537 JP 62110379	DE 3528467 FI 880544 NO 871443	

END OF ANNEX